

AN EXAMINATION OF THE US ARMY'S ENVIRONMENTAL ETHIC

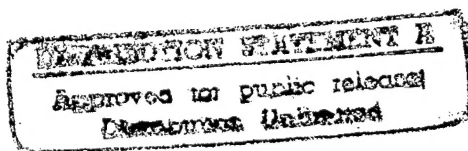
A Thesis

by

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Submitted to the Office of Graduate Studies of
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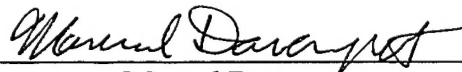
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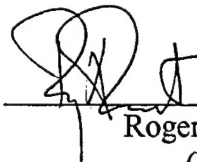
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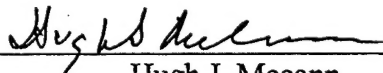
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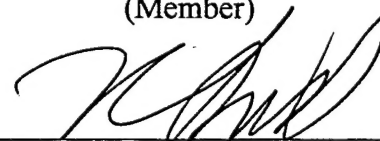
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ABSTRACT

An Examination of the US Army's Environmental Ethic. (May 1997)

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In this thesis I argue that the best justification for an environmental ethic for the US Army is one which is based on an anthropocentric or humanistic approach, and I evaluate the Army's Environmental Ethic in light of this. I then consider the Army's Environmental Ethic as a normative operational environmental ethic: an ethic which should help to guide commanders in the field, particularly in times of war. I conclude that the Army's stated operational-level Environmental Ethic is both appropriate and adequate.

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I. INTRODUCTION

The United States Army is an important overseer of natural resources. In its national defense and civil works missions the Army manages more than 20 million acres of land, including many unique natural and cultural resources (US Army Environmental Center). It consumes or utilizes vast quantities of other natural resources in the form of petroleum products, water, land and air. Much of its training is inherently destructive to the land, produces extensive amounts and levels of noise, and is generally disruptive to the natural inhabitants of the land on which it trains. The stakes, then, are very high for even a peacetime Army in terms of cost to the environment.

The Army is far from insensitive to this issue. The Army already has a formally stated environmental ethic. In addition, the Army has published regulations, training circulars and manuals which cover a wide range of topics: from the regulations and the Army Environmental Ethic itself to a vast array of material on how to avoid contaminating areas and how to clean-up areas which have been contaminated.

Although much work has been done over the last three decades in the areas of professional military ethics and in environmental ethics¹, very little work has been done which specifically explores the military's moral obligation toward the

The *MLA Handbook* was used as a journal model for this thesis.

¹ There are many excellent sources for discussions of issues in military ethics. Among those consulted for this work are *The Challenge of Military Leadership*, Lloyd J. Matthews and Dale E. Brown, eds. <Footnote continued on next page>

environment. One notable exception is Merrit Drucker's "The Military Commander's Responsibility for the Environment." Drucker argues that in peacetime, a military's commander's moral responsibility to minimize damage to the environment stems from the commander's civil responsibilities as an agent of the state. In time of war, the commander's moral responsibility is analogous to the moral obligation to protect noncombatants and works of art. I agree that there is indeed a moral basis for a military commander's responsibility for the environment, but the justification must be the same in both war and in peacetime. This is not to say that one's obligations toward the environment are the same in both war and in peacetime training, but that the justification for that moral responsibility must be the same.

As such, the moral justification for a commander's responsibility to the environment is best secured through an appeal to traditional ethical theories which recognize the direct moral standing of human beings but not necessarily other sentient creatures, plants or biosystems. This is in contrast to the direction environmental ethics and environmental philosophy have been moving in the last two decades or so. During this time, many environmental ethicists and many ecologists

New York: Pergamon-Brassey, 1989; Paul Christopher, *The Ethics of War and Peace*, New Jersey: Prentice Hall, 1994; Manuel Davenport, "The Military Virtues: From Aristotle to Skinner," in *Southwest Philosophy Review*, vol. III, 1996, pp. 161-177; James M. Dubik, "Social Expectations, Moral Obligations and Command Responsibility," in *The International Journal of Applied Philosophy*, vol. 2, spring 1984, pp. 39-48. Gabriel, Richard A. and Paul L. Savage, *Crisis in Command: Mismanagement in the Army*, New York: Hill and Wang, 1978; *War, Morality and the Military Profession*, Mal Wakin, ed., Boulder: Westview Press, 1986. Anthony E. Hartle, "Humanitarianism and the Laws of War," in *Philosophy*, vol. 61, 1986, pp. 109-115; *The Parameters of Military Ethics*. Lloyd J. Matthews and Dale E. Brown, eds., New York: Pergamon-Brassey, 1989; Michael Walzer, *Just and Unjust Wars*. New York: Basic Books, Inc., 1977.

have come to argue that certain natural objects such as plants and animals have moral standing themselves, and that consequently, we have a direct moral responsibility to such natural objects. Even more recently, environmental ethics has shifted toward a more holistic approach to the problem. Under this approach, collections or "wholes," rather than individuals, are seen as having direct moral standing. These wholes might be defined as ecosystems, biotic communities or other such entities and often require a shift into the areas of epistemology and metaphysics to provide an attempt at justification.

These latter methods, however, fail in providing a moral basis for an Army environmental ethic. The nature of the Army's mission and its uncoded professional military ethic necessitate that human considerations take priority. To deny this runs contrary not only to every soldier's moral obligation to "support and defend the Constitution of the United States," but also to the very interests of the society which the Army exists to serve and benefit.

II. THE BASIS FOR AN ARMY ENVIRONMENTAL ETHIC

In this section I consider the ethical foundation of an environmental ethic for the United States Army. What is the moral justification of the Army's Environmental Ethic? I first offer some background and history of environmental concerns for the military in general and for the US Army in particular. Next, I explain three general approaches to grounding an environmental ethic. These approaches are extensionism, the holistic approach and the humanistic or anthropocentric approach. Finally, I explain then US Army's current environmental ethic and evaluate it with respect to its moral justification.

History and Background

Military commanders have traditionally viewed the environment as a resource to be exploited for tactical, strategic, or economic reasons. Indeed, military operations have historically caused tremendous damage to ecosystems, and before the turn of the century, little serious consideration was given to the issue. History is saturated with examples of such operations, such as the sowing of salt in the earth, the deliberate destruction of domestic animals and habitats, and the destruction of crops and defoliation of vegetation.

Public opinion and international law have not been completely silent with respect to environmental effects of military activity.² Even the Old Testament

² The following four citations are actually derived from Drucker.

commanded its people not use fruit trees for military construction (Deuteronomy. 20:19-20), and Plato remarks in the *Republic* that Greeks “will not ravage the country or destroy the houses” (471b). As early as 1625 there were formal, comprehensive arguments for limiting military damage to the environment. In *The Law of War and Peace*, Hugo Grotius set forth a set of moral rules for military commanders intended to limit or prevent damage to the environment.

In more modern times, the Enmod Convention of 1977 requires countries “not to engage in military or other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party” (Goldblat, 196). Protocol I to the Geneva Convention of 1949 explicitly requires combatants to limit environmental destruction:

Care should be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population. Attacks against the natural environment by way of reprisals are prohibited (Goldblat, 194-5).

As environmental awareness increased in society at large throughout the twentieth century, formal prohibitions and awareness in the military arena also increased.

This increase in awareness led not only to formal international sanctions, such as those mentioned above, but inevitably to increased federal bureaucratic and legal requirements with respect to the military. The most recent of these, manifested in a

Department of Defense Directive,³ updates policy from 1973 and establishes procedures for environmental security within the entire Department of Defense community.

The Army, for its part (and side by side with other military components), has devoted an increasing amount of resources to environmental issues, including awareness, restoration, conservation and protection. In 1992, the Army appointed the first Director of Environmental Programs, and the US Army Environmental Center was formally established in 1993. In addition to being formally responsible all environmental policy implementation, compliance and review, the Center has the additional challenging mission of engendering the following vision: "The Army will be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of [the overall Army] mission."

The US Army is thus committed to not only to limiting environmental damage across the entire spectrum of operational missions, but has made a firm commitment in the areas of preservation, restoration, recycling, wildlife management and a host of other areas. Before we consider the Army's vision and corresponding environmental ethic, however, I want to examine the general issue of an environmental ethic in more detail.

³ Department of Defense Directive Number 4715.1, February 24, 1996.

Defining and Justifying an Environmental Ethic⁴

Amidst all the rhetoric and emotion concerning what environmental philosophers and activists commonly call our current or approaching "environmental crisis," there is a phrase commonly thrown around with little attempt to explain its meaning: "environmental ethic." This lack of explanation stems, I think, from some basic confusion about just what the term *does* mean. If we view the term as we do other labels for "types" of ethics (such as "professional ethics," "military ethics," "medical ethics"), then at its most basic level "environmental ethics" must refer to *behavior* concerning the environment and environmental issues. Further, it must be concerned with what kind of behavior is to be considered right and wrong with respect to these things.

As Joseph Des Jardins explains it, environmental ethics is simply an account of the moral relations between human beings and their natural environment (9). An environmental ethic then must explain not only what these norms are and to whom (or what) they apply, but also how they are justified. The way we answer this final question of justification, however, will determine the sorts of answers we are able to provide about what our responsibilities are and to what kinds of things we have

⁴ There are many excellent general anthologies and texts on environmental ethics. See, among others, Robin Attfield, *The Ethics of Environmental Concern*. Athens: University of Georgia Press, 1991; *The Ethics of the Environment*, Andrew Brennan, ed. Brookfield, Vermont: Dartmouth Publishing, 1995; *Ethics and Environmental Responsibility*, Nigel Dower, ed. Brookfield, Vermont: Gower Publishing Company, 1989; Holmes Rolston, III. *Environmental Ethics*. Philadelphia: Temple University Press, 1988; *Environmental Ethics*, Louis Pojman, ed. Boston: Jones and Bartlett, 1994.

responsibilities. The normative account of how we should behave toward the environment will ultimately rest on the question of *why* we should value the environment at all: Simply for our sake, for the environment's sake, or somehow for both.

Traditionally, ethical theorists have held that only human beings carry moral standing. Beginning in the twentieth century, however, many in the environmental community began calling for a "new ethic," one which acknowledged the moral standing of non-human nature. This gave rise to new candidates for the moral justification of an environmental ethic. In what follows, I explain and offer some brief criticisms of three candidates for the justification of an environmental ethic. The three approaches are the anthropocentric approach, extensionism, and finally the holistic approach.

The Anthropocentric Approach

Under this approach, only other human beings have inherent moral worth and can be the object of moral consideration. As such, the environment is viewed as valuable in terms of its value to *man*, both with respect to resources and as an arena of human interaction. Damage or harm to the environment is wrong inasmuch as it directly or indirectly affects other human beings. Callicott cites Kristin Shrader-Frechette as one typical example of this view :

It is difficult to think of an action which would do irreparable damage to the environment or ecosystem, but which would not also threaten human well-being. . . . if a polluter dumps toxic wastes in a river, this action could be said to be wrong. . . . because humans have interests in having clean water (393).

But the damage need not be so threatening or irreparable for the environmental anthropocentrists to consider an action as wrong. Many versions of the anthropocentric approach support the ethical treatment of animals and the conservation and preservation of plant life, in terms of both individual plants and ecosystems. They do so, however, *without* acknowledging any direct moral standing for these entities.

The anthropocentric view is compatible with such standard normative ethical theories as utilitarianism, virtue ethics, natural law ethics and Kantian ethics. One can even form an anthropocentric environmental ethic on the basis of interest, values, rights, justice or dignity. Nuyen provides one such example of the latter when he argues:

It should be realized that it is distinctly human to be able to recognize and appreciate qualities such as beauty, tranquillity, harmony, richness, excellence, and to abhor and avoid violence, chaos, ugliness, poverty, and indeed inhumanity. Thus, if we desecrate the environment, if we wipe out species of plants and animal, if we destroy or damage objects of beauty, we will not have just impoverished our own natural home, but impaired the human good. We will have hurt human integrity and dignity. Similarly, by treating animals cruelly, we promote violence and inhumanity, the very things that detract substantially from the ideal of being human (221).

One need not necessarily agree with Nuyen to realize that anthropocentrism is capable of providing many different paths to similar normative accounts of an environmental ethic.

The scope of consideration is made even more broad under what is labeled “protracted anthropocentrism.” Under this approach moral worth and consideration

is extended to future generations, so that any harm to the environment which might potentially affect future generations must also be taken into consideration.

Anthropocentrism has come under scrutiny and attack from many within the environmental movement. A large number of the criticisms fall into one of two categories. The first is that the *practical* effect of considering the environment worthy only inasmuch as it affects humans would allow behaviors and acts which do irreparable harm to the environment itself. As Callicott states it, "I doubt that a human-centered ethic for the use of the environment would in fact prohibit human harms to the environment as strictly as any other ethic" (394). This view might provide an adequate resource management ethic, the argument goes, but it cannot provide an adequate environmental ethic because it does not consider human harms to the environment as of *direct* moral concern. But this objection will not work. To reject the humanistic approach because it does not treat the environment as of "*direct* moral concern" is to beg the question of why we should not harm the environment in the first place. An objection of this sort presupposes that the environment *is* an object of direct moral concern: that is, that the environment itself has moral standing. But that is precisely the question we are attempting to answer when we speak of a justification for the environmental ethic. As such, there are no *philosophical* grounds for rejecting a humanistic justification based on this criticism.

A second critique of the humanistic approach fares no better. Under this criticism the humanistic approach is attacked as inconsistent for acknowledging the environmental cause and effect relationships at the micro-level, but ignoring the

macro-level environmental relationships in the "system" as a whole. That is, the humanistic justification ignores the "general structure of nature and the embeddedness of people within that structure" (Callicott, p. 394). This argument amounts in the end to the claim that the anthropocentric approach either cannot or simply does not recognize that human beings are a part of nature. There are two things to be said here. First, there is nothing inherent in a humanistic approach which necessitates that humans be considered as apart from nature, and so there is nothing which precludes a humanist from adopting a position which incorporates the "general structure of nature and the embeddedness of people within that structure." Second, if an anthropocentric environmental ethic is *able* to incorporate such a view but for the most part simply does not, then we must view this as a criticism of the way the ethic is applied. A criticism of the way the ethic is applied, however, tells us nothing about the justification of the ethic itself. It might well be that the anthropocentric environmental ethic is fully adequate, but simply not applied correctly.

An environmental ethic can be quite compatible with the anthropocentric approach. Since it is very rarely disputed that human beings are the objects of moral consideration, there are few problems with this approach providing a solid ground for an environmental ethic. As long as we do not think of the needs and purposes of humans in too narrow a way, the anthropocentric approach need not lead to an environmentalism limited to prudence, enlightened self-interest, the aesthetic needs

of a few, or even science. Seen in this way, the anthropocentric approach can encompass a rich variety of environmental concerns.

Extensionism

A second approach to justifying an environmental ethic attempts to ground moral concern for the environment by recognizing the *direct* moral standing of some non-human natural entities. As it is expounded by Peter Singer, this type of extensionism seeks to extend moral consideration to all sentient beings. Thus, the criterion for moral consideration is the ability to feel pleasure or pain. Some take the view a step further and ascribe rights to some animals based on their “inherent worth.” Some animals, the argument goes, are not only sentient but “subjects of a life that, from their point of view, can be better or worse” (Callicott, 394). Inherent worth of this kind then becomes the grounds for basic moral rights. This version of extensionism has been criticized by some within the deep-ecology movement as inadequate for grounding an environmental ethic because it gives no *direct* consideration to plant life and non-sentient animals. But this once again begs the question of why we should not harm such entities in the first place. This form of extensionism does give *indirect* consideration to such entities inasmuch as they are valuable to sentient beings. In this respect, it amounts to a sort of extended-humanism.

There are problems, however, with defining and identifying what exactly counts as a “sentient being,” and in giving coherent criteria for inherent worth. While it is relatively clear that animals such as goats and dogs count as sentient creatures,

the literature of biology, psychology and philosophy of mind are filled with debates not only on what things count as criteria for sentience, but what sorts of entities can and do meet the criteria. The debate on the issue is far from settled. The most popular method for arguing for the inherent worth of an entity, on the other hand, is an argument based on interests. Des Jardins points out, however, "that the concept of interests is so vague that it would allow tractors and buildings to have moral standing" (115). And even if we could come up with a coherent account of interests, this would do nothing to help us determine the way in which we should treat things which *have* interests, particularly in cases of competing interests. Equal consideration of interests does *not* imply equal treatment. Bryan Norton explains it this way in "Environmental Ethics and Non-Human Rights": "Expanding the number and types of rights holders does not address the problem of deciding which individual claims have priority over others-- it only increases these demands and makes it more and more difficult to satisfy them" (36). The extensionist is left with the messy task of either rank-ordering interests, or proposing an entirely different method for resolving such conflicts.

There is another form of extensionism which extends moral consideration based on a "life-principle." Kenneth Goodpaster argues that sentience is not an end in itself, but evolved as a means to further the goal of survival. Therefore, since sentience is ancillary to life, the capacity to live, rather than the capacity to experience pleasure and pain, should be the criterion of moral consideration. A living thing is then defined, for the purposes of ethical analysis, "in terms of

conations (i.e., inherent tendencies, directions of growth, and natural fulfillments)” (402).

There are two simple yet powerful arguments against this view. First, the extension of moral consideration to every living thing so dilutes the very concept of morality as to make it practically meaningless. If every living thing has moral status, moral space becomes so crowded that there could be no hope of settling the inevitable conflicts of interest which will arise. The whole enterprise of ethics threatens to collapse into absurdity. Second, the view is self-defeating. It requires that human agents either starve themselves to death or live in constant hypocrisy. But unnecessarily starving myself to death would seem to violate *my* right to life. Equally, to live by devouring other living things will violate *their* right to life. As Henryk Skolimowski points out, “Total egalitarianism, according to which every form of being has an absolutely equal right, is nonsense from the *human* point of view, which I must emphasize, is the only point of view we have. We are *human*, even when we wish to argue against this point!” (287). This version of extensionism, then, seems equally troublesome as a means for justifying an environmental ethic.

The Holistic Approach

The holistic approach to environmental ethics attributes intrinsic moral value to ecosystems, or biotic communities themselves, not simply to their individual members. The holistic approach to environmental ethics is an extremely popular one nowadays. It is manifested by the view that ecological “wholes” are worthy of serious moral consideration, whatever one takes these “whole” to be. We see more

subtle manifestations of it in metaphors such as "Mother Earth" and slogans like "Do What is Right for Nature's Sake." This view it is not without its problems.

The development and implementation of environmental policies themselves must take into consideration ecosystems as a whole. But, as Varner points out, "Taking a systems approach to environmental management does not commit one to direct moral consideration for the system *as such*, any more than adopting a systems approach to business management commits one to direct moral consideration of the business as such" (Ch. 1, p. 2). The burden of proof lies with the holist, to show just how such ecosystems qualify for *direct* moral consideration.

Most would agree that a normal adult human being has direct moral standing. As Varner points out, this is the usual starting point for ethical discussions. The holist then faces two options: he must either "(1) explain how a very different kind of entity- an ecosystem- can have interests, or (2) defend a different basis for the ascription of moral value and show that ecosystems meet this criterion" (Ch. 1, p. 3). Holists have made attempts at each approach.

While J. Baird Callicott is probably the most well-known current advocate of holism, many of his views are based on Aldo Leopold's Land Ethic as put forth in *A Sand County Almanac* and other writings. In *A Sand County Almanac* Leopold attempts to explain how an ecosystem or a biotic community could have interests itself. The basic argument is that ecological and evolutionary science has changed the very conception of community to the point that we should consider every other living thing as a member of a common biotic community. As such, our natural

sentiments extend to such a community, and in this way an ecosystem or biotic community can be seen as having interests in and of itself. The key to this approach, however, is that it needs to show not only that a biotic community as such has interests, but that these interests are *not* equated to the aggregate or average welfare of its individual members. Leopold's Land Ethic fails to do this. To argue that the interests of the community are simply the aggregate or average welfare of its individual members shows only, as mentioned earlier, that the individual members of the community have interests. And this is analogous to an extensionist approach, since one can plausibly argue that all living things have moral standing, and likewise speak of the welfare of a living community, without implying that the community as such has a welfare (Varner, Ch. 1, p. 16).

Callicott himself does not argue that biotic communities as such have interests apart from the interests of their individual members. Instead, he makes a different appeal with respect to method (2), the basis for ascribing moral standing to an entity. Callicott proposes that the basis for ascribing moral standing to an ecosystem or biotic community is that community's capacity for self-renewal (Callicott, 417). There are several problems with this approach. If one is not careful defining this criterion, things such as sand dunes and mud holes earn moral standing. It seems that we need to know just *what* is being renewed before we can accept the capacity for self-renewal as morally significant. There are several candidates, such as "integrity, stability, and beauty of the biotic community" (Callicott, 419). Callicott seems to think that these three candidates go together; that is, if the integrity of a system is

maintained, then it will be both stable and beautiful. In any case it is not clear why the capacity for self-renewal, by itself, somehow merits intrinsic value at all, much less intrinsic value to the degree (whatever one takes it to be) necessary for direct moral consideration.

There are other versions of holism, relying on such things as aesthetic appeals, the capacity of an ecosystem to produce organisms of inherent worth, the instrumental value of biotic communities, and others. Each attempts either to ascribe moral value to things such as ecosystems, or to defend an unconventional basis for the attribution of moral consideration. But, no matter which candidate we choose, holism faces an enormous burden of proof, that, as Varner points out, current versions simply fail to meet (Ch. 1, p. 27).⁵

There are two final points I want to mention. The first holds for both the extensionist approach and any holistic approach to justifying an environmental ethic. It concerns the fact that regardless of what entities other than humans one might consider to have moral standing, it is human beings who are ascribing moral worth. As such, even extensionist and holistic approaches smack of a certain anthropocentrism. Henryk Skolimowski probably states it best:

All claims made on behalf of the biotic community are made by human beings; they are filtered by human sensitivities and by human compassion; they are based on our human sense of justice, on our human recognition of how things are and how they ought to be; they are pervaded with human values-- all these claims are therefore deeply

⁵ One point I do not dwell on is that it is very difficult to define exactly what a "biotic community" or even an "ecosystem" consists of. This is no new problem, however, as even John Stuart Mill in "Nature" discussed problems of this same sort.

and profoundly embedded in our anthropocentrism, whether we care to recognize this or not.

Let us not forget that it is our sense of justice that guides us. We have never consulted those other species, on how they “think,” on what their opinion on the subject is. We seem to know better. Might this not be another form of anthropocentric arrogance? yet, we act on behalf of others and we are proud of the fact. (284)

Although Skolimowski may overstate the case, it does seem clear that no approach to justifying an environmental ethic can be completely immune to the influences of a particular degree of anthropocentrism.

The second point has to do with the adequacy of the anthropocentric approach itself. It is unclear to me why we would even need a new sort of moral justification for an environmental ethic. It does seem that we can promote a rich, diverse and vibrant biosphere using only the anthropocentric approach to ground an environmental ethic. William Grey points out that “we need to reject not anthropocentrism, but a particularly short term and narrow conception of human interests and concerns” (473). Likewise, Varner argues that an environmentalist agenda can be fulfilled without an appeal to either holism or an extensionist approach. Many others agree. Harris, Pritchard and Rabins point out in *Engineering Ethics* that we need not “settle the question of precisely what parts of the natural world have intrinsic value. It is sufficient to point out that non-health-related concerns can be justified by way of their connection with human welfare” (337). To use but one example, in terms of anthropocentrism, we might value the wilderness for any number of reasons, to include scientific knowledge, medicinal uses, athletic and

recreational uses, or even spiritual and aesthetic value (Howie, 136). And we do not need to consider the wilderness as of direct moral concern to do so.

Justifying an Environmental Ethic for the US Army

If the anthropocentric approach seems to provide the best moral grounding of an environmental ethic in general, does it follow that it provides the best moral justification for an Army environmental ethic? The answer is not necessarily.

The first question to address is why we even need to consider the issue from the peculiar perspective of the Army. Why can't we simply examine the strengths of the particular approaches to justifying an environmental ethic *regardless* of what or whom the ethic is intended to cover? The answer lies in the fact that the profession of the military occupies some unique moral territory, and along with this territory comes some peculiar moral rules and exceptions. This is so because the military role is what some call a "differentiated role," one in "which various considerations that otherwise would be relevant or even decisive in moral evaluations are disregarded or weighed less heavily" (Hartle, *Moral Issues*, 4). So while it may be immoral to kill, it is not considered immoral for the soldier to do so in the line of duty. Indeed, it can be just the opposite: The immoral act might be to refrain from killing when to do so is contrary to the mission and to the detriment of one's comrades.

So, if we accept *prima facie* that there is a moral ground for establishing or following an environmental ethic (however one happens to eventually formulate it), and we are attempting to choose between competing justifications for that ethic, the

mission of the Army *ought* to be taken into consideration as among the factors in selection.

As we saw in the previous section, the dust is far from settled in the debate over proper moral grounding for an environmental ethic. Of equal importance, the moral justification one accepts will *determine* in part what exactly that ethic will be, and how it will be applied.⁶ As such, there is the potential (indeed the likelihood) that the prescripts of an environmental ethic will conflict with particular missions the Army is asked to perform. Indeed, given that warfare is inherently damaging to the environment, one would be surprised if this were not the case.

There will be conflicts whatever justification is used. That there is a conflict may not be a reason in and of itself for rejecting a particular justification. If, however, one method of justification is more compatible with the purpose, missions and types of duties the Army is asked to perform, *that* may provide one consideration for preferring a particular justification over the others. We have already seen that the anthropocentric justification of an environmental ethic is capable of providing an ethic which encompasses a rich variety of environmental concerns. I now briefly examine the extensionist and holistic approaches in terms of compatibility with the mission of the US Army. Finally, I reexamine anthropocentrism in the same terms.

⁶ Some in the environmental movement see the relationship as working the other way: First, we determine how we should treat the environment, then we determine what the moral justification is. In most cases, however, this simply begs the question of why we should not harm the environment in the first place.

The Army Mission

The purpose of the Army and the focus of its individual members is indicated in the Constitution, the oath of commissioning or enlistment, and the nature of the international laws of war.

That there should be an Army is mandated by the US Constitution. The objective of the Army is found in Title 10 of the US Code, and is reflected in the current US Army Mission almost verbatim:

It is the intent of Congress to provide an Army that is capable, in conjunction with other armed forces, of-

- (1) preserving the peace and security and providing for the defense of the United States, the Territories, Commonwealths, and possessions and any areas occupied by the United States;
 - (2) supporting the national policies;
 - (3) implementing the national objective;
 - (4) overcoming any nations responsible for aggressive acts that imperil the peace and security of the United States.
- (Title 10 of the US Code)

Further, each member of the Army, upon enlistment or commissioning, swears (or affirms) an oath to "support and defend the Constitution of the United States against all enemies." Just what is being defended in the Constitution? Hartle argues that the Constitution functions in part as "the documentary statement of our national values" subject to interpretation by the rulings of the Supreme Court (85). Although any attribution of a specific set of values to the "people" at large ought to be met with skepticism, many do support the claim that one can identify national social values for a nation as large and diverse as the United States. Hartle goes on to argue that "the

values reflected in the Constitution can be summarized as freedom, equality, individualism, and democracy" (85).

The Army is also bound by international laws of war. These laws, as Hartle recognizes, "manifest humanitarian principles, and accordingly, certain values: human dignity, intrinsic human worth, and freedom from suffering. The American military, in adhering to the laws of war and in accepting them as legally and morally binding, implicitly accepts these principles and values as well" (85).

There is nothing in the Constitution, the oath, or reflected in the laws of war which would directly support either an extensionist or holistic approach to an environmental ethic. On the contrary, each of these references seems loaded with humanistic consideration and anthropocentric overtone. Nor should we expect to find anything different, the call for an other-than-anthropocentric environmental ethic being a relatively recent phenomenon. If there is an other-than-anthropocentric justification to be derived from these references, then, it lies in the answer to the following question: To what extent is either an extensionist or holistic approach to environmental ethics actually a reflection of the "values of the people"? If turns out that the answer is "to a large extent," then it seems the Army is *prima facie* obligated to adopt not only that particular approach to environmental ethics, but many of the specific values and practices which follow from that approach.

This is a difficult question, and I do not pretend to have a complete answer. My point, rather, is to point out that the principles and values which form the basis of the Army's mission and the commitment of those responsible for carrying out that

mission are inherently anthropocentric. And, as I indicate below, the Army's implicit justification of its Environmental Ethic is likewise anthropocentric. Those within the environmental movement who would call for a different justification, and in particular those who would support a different justification for the Army, i.e., an extensionist or holistic justification, bear, I submit, a further burden of proof to show that such a view is a reflection of the "values of the people," however we choose to define and explain that phrase.

Anthropocentrism and the Army's Environmental Ethic

The Army's heightened awareness of and concern for environmental issues actually is a reflection of the change in attitudes of society at large. Indeed, the Army cites in a 1996 White Paper as one of the reasons for its environmental ethic that such an ethic is "a reflection of national values."⁷ Further, the Army's Environmental Center depicts the Army's environmental strategy in a model of a building with a foundation and four pillars supporting the overall visions of environmental

⁷ The full list of reasons is as follows:

The Army has a responsibility to incorporate environmental considerations in its training, decision making process, and its operations:

- As an agent of the United States government, to comply with national, international, state, and local law.
- As a reflection of national values and as a civic duty.
- To protect field training and readiness.
- To conform to joint doctrine and requirements.
- For professional competence to develop:
 1. Strategic recognition of environmental factors as current and future causes of conflict.
 2. Operational capability to recognize and respond to environmental disaster, sabotage, and terrorism.
 3. Operational capability to designate, communicate, and conform to environmental protection procedures, tailored to the mission and location, rapidly and with a minimum of effort and resources.

foundation and four pillars supporting the overall visions of environmental stewardship. The strategy is founded on a “bedrock” of shared national values” which support the foundation, and is depicted below. (TC5-400, Figure 1)



Figure 1, Army Environmental Stewardship Model

The problems mentioned earlier with both the extensionist and holistic approaches to grounding an environmental ethic enduring, I see three reasons for rejecting an other-than-anthropocentric justification in light of the purpose and mission of the US Army:

1. The anthropocentric approach can accomplish just as much as other approaches in terms of providing a satisfactory environmental ethic.

2. The anthropocentric approach is currently reflected in the Army's Environmental Ethic. The burden of proof to change such a justification will consist in showing that the values of the society which the Army serves are better reflected in a different justification.

3. Both the extensionist approach and the anthropocentric approach have the potential for much greater conflict of interest with respect to the duties and missions of the Army. This is so simply in light of the fact that by expanding the realm of *direct* moral consideration, we unnecessarily complicate the decision-making processes. This is not to say, of course, that environmental considerations are not or should not be a part of the decision-making process. They should. In the next section I explore the Army's current operational environmental ethic, and consider its adequacy.

III. THE ARMY'S OPERATIONAL ENVIRONMENTAL ETHIC

I have so far discussed the Army's Environmental Ethic in very general terms, attempting to answer the question of "why" with respect to the ethic. I now turn my attention to the "what" of the Army Environmental Ethic.

Is There a Need?

One might ask, "Is there a *need* for an environmental ethic for the Army?" There are already volumes of laws and regulations which govern what may and what may not be done with respect to the environment. Likewise, there are several versions of a recognized (though not formally codified) professional ethic for the military. Finally, the Department of Defense published its "Joint Ethics Regulations" in 1993 which was intended to provide "a single source of standards of ethical conduct and ethics guidance" for military personnel" (DoD 5500.7-R, 30 August 1993). Why would we *need* a distinct Army Environmental Ethic?

First, laws are not only incomplete, but they change frequently. In addition, they are so numerous that it would be practically impossible to memorize a sufficient number of them to be practically versed in the environmental laws as they relate to Army operations. Second, with respect to Joint Ethics Regulations, they are likewise "so detailed and complex that JER requires that in almost every case an "ethics counselor" must be an attorney" (Meyers, 23). Finally, part of the answer I believe lies in the *way* one accomplishes the stated goal of minimizing damage to the

environment. To be most effective, accomplishment of this type of goal will require not simply a change in behavior and methods among soldiers and leaders, but a change in attitude. That Army training and war-fighting are inherently damaging to the environment is not surprising. The reasons are many, but have traditionally had to do with "a mix of intentions and inadvertent effects" (Beaumont, 140). Incorporating an operational-level environmental ethic into Army doctrine and values can help to reduce damage to the environment both by increasing awareness of environmental issues and by working toward making environmental concerns a standard part of Army missions at the operational level. Given all this, just how should the ethic be formulated?

The ethic should occupy some practical ground between specificity and generalization. On the one hand, the ethic might be so broad as to be useless, something along the lines of "treat the environment with respect". At the other end of the spectrum, the ethic could be so lengthy as to be impractical, including all the applicable laws and regulations which govern environmental concerns.

Defining the Army's Operational Environmental Ethic

The Army's environmental ethic is based on the following Vision Statement issued by the USAEC:

VISION: The Army will be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of all Army missions.

Traditionally, the stewardship model of environmental ethics has involved the Judeo-Christian concept of man, empowered by God, as the steward of both the earth and all that is on it. The Army, however, is striving for a more conventional use of the term:

- Stewardship--wisely using and managing environmental resources--is a natural outgrowth of the Army's role as a protector of US national and economic security. (USAEC)

This vision statement gives us one version of the broad "what" -- wisely use and manage environmental resources-- but is of little practical value at the operational level. In a training publication called *The Unit Leader's Handbook for Environmental Stewardship*, used as a reference in training soldiers at all levels, is another version of the Army Environmental Ethic which is of little practical use: "We will take care of the environment because it is the right thing to do" (3).

Army and joint doctrine do seem to recognize, however, that environmental protection considerations belong in operational doctrine for not only for strategic and operational reasons, but for ethical reasons as well. However, as a recent White Paper points out, doctrine development has just begun. Environmental protection procedures for deploying forces must currently be planned in detail for each deployment because standard terminology, responsibilities, and procedures do not yet exist. (9) What does exist are several methods for engendering and incorporating the Army Environmental Ethic into current operational-level procedures, including a chapter in TC5-400 on "Risk Management During Unit Training and Military Operations." Appendix A shows one example of such risk-reduction measures as they might be used in a standard mission analysis. Appendix B shows several risk-

assessment matrices for environmental factors. The matrices are of a type which is already utilized at the operational level in combat units in the course of mission preparation, and could be readily integrated to evaluate environmental risks for a given mission. The goal of such an evaluation is twofold: 1. To make both soldiers and leaders more aware of the environmental aspects of the mission and 2., Through this awareness, work to decrease unnecessary damage to the environment.

The Army seems to take its role as an environmental steward seriously. This is manifested not only in the amount of resources and training materials it has already committed to the task, but even more in its call for an overall shift in perspective in relation to environmental issues. This is illustrated in the following statement from General Gordon Sullivan, Army Chief of Staff: "Just as we preserve and defend the freedom of this great country of ours, so must we also protect its finite and precious resources" (TC5-400, 5). The attitude is likewise reflected in recent Army doctrinal publications, which have begun to incorporate environmental protection considerations. Examples include:

- FM 100-7, Decisive Force: The Army in the Theater (May 1995): Notes that when functioning as the ARFOR, a corps or division may be tasked to assume specific operational level Army responsibilities in providing support to all services for environmental protection and cleanup.
- FM 100-10, Combat Service Support (October 1995): Recognizes that our national values require that Army operations be environmentally sustainable. "They must meet current needs without compromising the integrity of the environment for future generations."
- FM 100-19, Domestic Support Operations (July 1993): Devotes a chapter to environmental missions within the United States.
- FM 100-23, Peace Operations (December 1994): Notes the requirement for coordination with local authorities about environmental concerns and states that US force presence should not adversely impact the environment.

(White Paper, June 1996)

Applying the Ethic

To fully realize its role as an environmental steward, the Army must engender a change in attitude among its members. This is no easy task. The Army seems to realize this, noting in reference to an environmental ethic that "establishing an organizational ethic requires a generation of schooling" (TC5-400, 11). And a generation of *practice*, it should add. The Army seems cognizant of this and other considerations in the implementation of an environmental ethic. The key will be incorporating the ethic into doctrine and training. Only then, once the ethic has been internalized and has become habit, a matter of routine, will it have a hope in being successful on the battlefield or in other challenging operations which do not include actual war. The White Paper sums it up nicely:

The new strategic conditions of the 21st Century require the military, along with other institutions, to avoid unnecessary environmental damage at all times and to be able to actively protect natural resources when appropriate to the mission. The Army has already made progress toward meeting this requirement. An environmental ethic, strategy, and visions have been clearly articulated; skills are being developed through training; and incorporation into doctrine has begun. Integrating these consideration into operational doctrine is a necessary element in the orderly development of a new institutional ethic and capability. (8)

IV. CONCLUSIONS

The US Army needs an environmental ethic for several reasons. First, as the term implies, soldiers and leaders have a moral obligation to both protect the environment and minimize damage whenever possible. The moral justification for such an ethic must arise from an anthropocentric approach. This is so not simply in light of the merits of the anthropocentric approach in justifying an environmental ethic (and the shortcomings of the alternatives), but because of the nature and purpose of both the Army itself and the commitments of its individual members. The current US Army Environmental Ethic, "We will take care of the environment because it is the right thing to do," while of little practical value by itself, may indeed be a valuable tool in helping change attitudes among Army members. When combined with the operational-integration of specific environmental considerations in mission planning and execution, the whole is a promising method to engender environmental concern through developing and enforcing appropriate behaviors. This will be the first step in "internalizing" the ethic. The Army is on the right track.

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APPENDIX A

UNIT LEADERS METT-T ENVIRONMENTAL RISK-REDUCTION MEASURES⁸

During training activities, the consideration of environment using the METT-T process can identify and decrease environmental damage/liabilities and enhance mission accomplishment.

Consider the following:

Mission

- Anticipate or assess environmental risk during planning.
- Analyze effects of environmental risks on mission operations.
- Simplify scheme of maneuver.
- Issue complete and concise orders.
- Ensure key leaders track the exercise and render timely reports.
- Identify alternative training scenarios or techniques.
- Use large-scale battalion- or brigade-sector sketches for detail.
- Send key leaders on objective reconnaissance.
- Set the environmental standard within the unit, and ensure soldiers are aware of and comply with that standard.
- Keep the chain of command informed of environmental problems and concerns.
- Take immediate and effective action in response to hazardous spills or other emergencies.

Enemy (Opposing Forces (OPFOR))

- Ensure the OPFOR commander understands environmental problems and concerns.
- Know enemy characteristics and equipment.
- Identify environmental impacts of decisions.

⁸ Derived from C5-400, Appendix E

Terrain and Weather

- Ensure high-risk areas (surface waters, archeological sites, and endangered species) are identified/marked.
- Navigate accurately; know your location.
- Ensure that unit boundaries are identifiable.
- Ensure that there are redundant navigation aids or checks.
- Know weather effects (dry/windy or wet/soggy conditions), and limit/alter operations accordingly.

Troops and Equipment

- Ensure that soldiers are briefed on environmental concerns/standards.
- Demand situational awareness - units, enemy, hazards, and environment.
- Anticipate where maneuver density will be highest.
- Use validated SOPs to simplify operations.
- Insist on accurate and timely spot reports.
- Recognize soldier stress.
- Rehearse, always.

Time

- Maximize planning time.
- Prioritize tasks, rehearsals, and reconnaissance.
- Adjust pace and tempo.

APPENDIX B

ENVIRONMENTAL RISK-ASSESSMENT MATRICES⁹

One cannot identify environmental risks without first determining what the hazards are. The best tool unit leaders can use in identifying hazards is the environmental risk assessment. Assessing risks in any operation can be as small an issue as simply asking, "How can the environment (air, land, and water) be damaged, and what can I do about it?" Asking that one question, getting an answer, and applying the environmental risk-assessment principles of task analysis and hazard control may prevent needless damage to the environment.

The environmental risk-assessment forms can be used by unit leaders to identify hazards and threats and place them in perspective to the mission or task at hand. These forms can be modified to more accurately reflect your mission, environmental conditions, and local requirements.

B-1. Air Pollution Probability of Occurrence.

Value / Contributing Factors

5 / Current or forecasted weather conditions will contribute to range fires (dry and windy conditions).

Operating area is susceptible to range fires.
 Vehicles and equipment are not reliable or well maintained.
 Soldiers are not environmentally conscientious.
 Soldiers are not proficient/experienced.
 Command and control or supervision is marginal.
 Sustained high-tempo operations are planned.
 Extensive use of explosives is planned.

4 / Operating area is susceptible to range fires.

Current or forecasted weather conditions could contribute to range fires.
 Soldiers are not environmentally conscientious.
 Some high-tempo operations are planned.
 Some use of explosives is planned.

⁹ Derived from TC5-400, Appendix E.

3 / Weather is favorable to training; winds and range conditions are within safe operating limits.

Operating area is safe from range fires.
Soldiers are briefed on hazards of range fires and fire restrictions.
Command and control or supervision is adequate.

2 / Operating area is safe from range fires.

Standby fire-fighting equipment is available.
Soldiers are environmentally conscientious.
Soldiers are briefed on hazards of range fires and fire restrictions.
Command and control or supervision is good.

1 / Operating areas are not susceptible to range fires.

Fires are limited, controlled, and allowed only in authorized areas (powder burn areas and incinerators).
Use and training with CS (riot-control chemical agent) and smoke are strictly controlled.
Vehicles and equipment are well maintained and in good operating order.
Soldiers are environmentally conscientious.
Soldiers are thoroughly familiar with range fire restrictions.
Command and control or supervision is excellent.

0 / No risk/not applicable.

B-2. Archeological and Historic Sites Probability of Occurrence.

Value / Contributing Factors

5 / Low-visibility, night, or sustained high-tempo operations are planned.

Terrain has many archeological or historic sites.
Sites are neither identified nor marked off as restricted areas.
Command and control or supervision is marginal.
Soldiers are not familiar with the terrain.

4 / Terrain has some archeological or historic sites.

Archeological and historic sites are marked off.
Low-visibility or night operations are planned.
Command and control or supervision is adequate.
Soldiers are not familiar with the terrain.

3 / Archeological and historic sites are marked off.

Soldiers have been briefed on sites in operating area.
No low-visibility or night operations are planned.
Command and control or supervision is adequate.

2 / Archeological and historic sites are identified and marked off.

No low-visibility or night operations are planned.
Command and control or supervision is good.
Soldiers are familiar with the terrain.

1 / Archeological and historic sites are identified and marked off.

Soldiers avoid sites during training, operations, and logistics activities.
Soldiers are proactive in recognizing, safeguarding, and reporting signs or evidence of possible archeological artifacts or sites.
Command and control or supervision is effective.
Soldiers are thoroughly familiar with the terrain.
Current or forecasted weather conditions are not an adverse factor.

0 / No risk/not applicable.

B-3. Hazardous Materials and Hazardous Waste Probability of Occurrence.

Value / Contributing Factors

5 / Low-visibility, night, or sustained high-tempo operations are planned.

Operations are planned close to surface water sources.
Current or forecasted weather conditions are harsh.
Soldiers' experience with responding to hazardous material or hazardous waste spills is limited or untested.
Command and control or supervision is marginal.
Soldiers generally consider environmental matters a nuisance.

4 / Some high-tempo operations are planned.

Operations close to water sources are planned.
Current or forecasted weather conditions are marginal.
Some individuals are hazardous material/ hazardous waste qualified.

3 / Soldiers are environmentally conscientious but not trained.

Key hazardous material/ hazardous waste personnel are available during operations and maintenance activities.

Adequate spill cleanup materials are available.

Command and control or supervision is adequate.

Current or forecasted weather conditions are not a factor.

Operations tempo is normal.

2 / Normal operations are planned (soldiers have adequate rest).

Key hazardous waste/ hazardous material individuals will oversee high-risk hazardous waste/ hazardous material operations and maintenance activities. Soldiers are environmentally sensitive and hazardous waste/ hazardous material trained.

Current or forecasted weather conditions are not a factor.

Command and control or supervision is excellent.

1 / Soldiers dealing with hazardous waste/ hazardous material are well trained and experienced.

Spill-response team is well trained and has successfully conducted a hazardous waste/ hazardous material spill drill within preceding six months.

Unit hazardous material/ hazardous waste SOP is current (has accurate hazardous material/ hazardous waste inventory and location of hazardous material/ hazardous waste identified), and fire department is provided with this inventory and the location.

Command and control or supervision is excellent.

Hazardous material/ hazardous waste is transported according to local/installation procedures.

Tempo of operations, training, and maintenance is normal.

Soldiers support the recycling program.

Work areas are well maintained, and unit maintains good housekeeping practices.

0 / No risk/not applicable.

B-4. Noise Pollution Probability of Occurrence.

Value / Contributing Factors

5 / Sustained high-tempo operations are planned, with much noise generating equipment and activities (artillery, tracked vehicles, marksmanship).

Activities are located close to civilian populace.
Command and control or supervision is marginal.
Soldiers' proficiency is marginal.
Soldiers are not environmentally conscientious.
Extensive night maneuvers planned.

4 / High-tempo operations are planned with some noise generating activities.

A large number of engine starts and runups are required.
Command and control or supervision is adequate.
Activities are located near civilian populace.
Soldiers are not environmentally conscientious.
Limited night maneuvers planned.

3 / Level of noise generating equipment is normal.

Civilian populace will be nominally affected.
Command and control or supervision is adequate.
Night maneuvers may be conducted.

2 / Nominal noise levels are generated.

Command and control or supervision is good.
Soldiers are environmentally conscientious.
Night maneuvers not likely.

1 / Soldiers are aware of and comply with noise-restriction hours.

Minimum operations, training, or maintenance activities are planned.
Command and control or supervision is highly effectively.
Activities are located away from civilian populace.
No night maneuvers planned.

0 / No risk/not applicable.

B-5. Threatened and Endangered Species Probability of Occurrence.

Value / Contributing Factors

5 / Threatened and endangered species habitats are not identified.

Threatened and endangered species habitats are not marked off as a restricted area.

Command and control or supervision is marginal.

Low-visibility or night operations are planned.

Sustained high-tempo operations are planned.

Soldiers are not familiar with the terrain.

4 / Threatened and endangered species habitats are marked off.

Low-visibility or night operations are planned.

Command and control or supervision is adequate.

Soldiers are not familiar with the terrain.

3 / Threatened and endangered species habitats are marked off.

Soldiers are briefed on threatened and endangered species.

Low-visibility or night operations are not planned.

Command and control or supervision is adequate.

2 / Threatened and endangered species habitats are identified.

Threatened and endangered species habitats are marked off.

Low-visibility or night operations are not planned.

Command and control or supervision is good.

Soldiers are familiar with the terrain.

1 / Threatened and endangered species habitats are identified.

Soldiers know and recognize threatened and endangered species.

Threatened and endangered species habitats are marked off as restricted/"off-limits" areas.

Soldiers avoid threatened and endangered species habitats during training, operations, and logistics activities.

Command and control or supervision is effective.

Soldiers are thoroughly familiar with the terrain.

0 / No risk/not applicable.

B-6. Water Pollution Probability of Occurrence.

Value / Contributing Factors

5 / Current or forecasted weather conditions will cause much terrain damage.

Spills most likely will affect surface waters (wetlands, groundwater, streams, ditches, sewers, or drains).

Night or low-visibility operations are planned.

Soldiers' environmental proficiency is low.

Command and control or supervision is marginal.

Sustained high-tempo operations (36 hours plus) are planned.

Spill response is marginal or untested.

Spill-response material is not available.

4 / Current or forecasted weather conditions will cause some terrain damage.

Spill on the ground is 25+ gallons and will not affect surface waters, wetlands, groundwater, streams, ditches, sewers, or drains.

High-tempo operations (up to 36 hours) are planned.

Soldiers' proficiency is somewhat low.

Command and control or supervision is marginal.

3 / Spill on the ground is less than 25 gallons, with no possibility of contaminating any water source.

Normal operations (12-16 hours a day) are planned.

Soldiers are environmentally sensitive.

Command and control or supervision is adequate.

Weather will not adversely affect operations.

2 / Ground spill is minor (less than one gallon), with no possibility of contaminating any water source.

Normal operations (12-16 hours a day) are planned.

Soldiers are environmentally sensitive.

Command and control or supervision is good.

Soldiers are trained in spill-response duties.

Spill-control material is readily available.

1 / No potential for spill.

Soldiers' proficiency is high.
 Soldiers are very environmentally sensitivity.
 Command and control or supervision is high/tested.
 Soldiers maintain good housekeeping practices.
 Equipment is well maintained.
 Collection of maintenance wastes are managed properly.

0 / No risk/not applicable.

B-7. Wetland Protection Probability of Occurrence.

Value / Contributing Factors

5 / Sustained high-tempo operations are planned.

Command and control or supervision is marginal.
 Current or forecasted weather conditions will adversely affect operations.
 Wetland boundaries are not marked or understood by soldiers.
 Soldiers are not environmentally conscientious.
 Soldiers' proficiency is marginal.
 Equipment is unreliable or untested.
 Field service/maintenance may have to be done near wetlands.
 Spill response is marginal or untested.
 Spill response material is not available.

4 / Wetland boundaries are marked.

Low-visibility or night operations are planned.
 Command and control or supervision is adequate.
 Soldiers are not familiar with the terrain.
 Soldiers are not environmentally conscientious.
 Field service/maintenance may have to be done near wetlands.

3 / Wetland area is well defined and marked.

Soldiers have been briefed on susceptibility of wetlands to damage by operations, training, and logistic activities.
 No low-visibility or night operations are planned.
 Command and control or supervision is adequate.

2 / Wetland area and boundaries are well defined.

Soldiers are environmentally conscientious.
 No low visibility or night operations are planned.
 Command and control or supervision is good.
 Soldiers are familiar with the terrain.

1 / Maintenance is conducted in approved areas.

Wetland areas and boundaries are identified.
 No refueling will be conducted in wetland areas.
 Streams/ditches will be crossed at designated vehicle crossings.
 Command and control or supervision is excellent.
 Soldiers are environmentally conscientious.
 Soldiers are familiar with terrain.
 Applicable permits for activities impacting wetlands have been obtained.
 Collection of maintenance wastes are managed properly.

0 / No risk/not applicable.

Environmental Risk-Assessment Worksheet

Environmental Area :

Unit Operations	Risk Impact					
Movement of heavy vehicles and systems	5	4	3	2	1	0
Movement of personnel and light vehicles/systems	5	4	3	2	1	0
Assembly-area activities	5	4	3	2	1	0
Field maintenance of equipment	5	4	3	2	1	0
Garrison maintenance of equipment	5	4	3	2	1	0

VITA

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